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EXAMINER	
SHIN, KYUNG H	
ART UNIT	PAPER NUMBER
2443	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/750,334	SOSNOVSKY ET AL.	
	Examiner	Art Unit	
	Kyung Hye Shin	2443	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on *12/31/08* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This application was filed on **12-31-2003**. Claims **1 - 36** are pending. Claims **1, 15, 18, 21, 33, 34, 35, 36** are independent.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. The claimed invention is directed to non-statutory subject matter. Claims **34, 35** disclose a computer program product having a computer readable medium and a computer data signal. The specification on page 23, lines 16-17 discloses:

> "Those skilled in the art should readily appreciate that the programs and methods for method for interprocess communication via the services architecture as defined herein are deliverable to a processing device in many forms, ... The operations and methods may be implemented in a software executable object or as a set of instructions embedded in a carrier wave".

The placement of program instructions within a carrier wave or a data signal indicates that the claimed invention is directed toward non-statutory subject matter. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims **1 - 3, 5 - 7, 9 - 13, 15 - 17, 21 - 23, 25 - 27, 29 - 32, 34 - 36** are rejected under 35 U.S.C. 102(e) as being anticipated by **Kekic et al.** (US Patent No. **6,664,978**).

Regarding Claims 1, 21, 34, 35, 36, Kekic discloses a method, services architecture, computer program product, computer data signal for interprocess communication in a managed information architecture comprising:

receiving a registration from a service entity in the managed information architecture, the registration indicative of a significant occurrence in the managed information architecture and the service entity responsive to the significant occurrence; (Kekic col 71, ll 25-32: local objects to register (or unregister) their interest for notifications; register a process (object, service entity))

establishing a persistent association of the service entity and the significant occurrence in response to the registration, the persistent association independent of the enablement of the service entity, the persistent association providing a registered service entity; (Kekic col 71, ll 33-38: hashtable (persistent association between object and notification event) with remote service object as key; for each server object there can be multiple local objects that are interested in notification; only registered objects are within the hashtable)

receiving a notification indicative of the significant occurrence in the managed information architecture; identifying, via the persistent association, the corresponding registered service entity responsive to the significant occurrence; (Kekic col 71, ll 46-48: notification received, notification dispatcher updates affected object or entity; col 71, ll 11-19: client can receive notification when the state of server side objects change; (notification received))

enabling, if the identified registered service entity is disabled, a module including the service entity; (Kekic col 71, ll 42-45: method subscribes for notification; col 71, ll 33-38; col 71, ll 16-19: listener invokes local object required for notification) and

invoking, via the persistent association, the service entity responsive to the significant occurrence. (Kekic col 71, ll 46-48: notification dispatcher updates the affected object and invokes method)

Regarding Claims 2, 22, Kekic discloses the method, services architecture of claims 1, 21 further comprising detecting, via a class entity operable to execute instructions in the context of state information, the significant occurrence, and transmitting an indication message indicative of the significant occurrence to a module server operable to invoke the service entity. (Kekic col 71, ll 46-54: class entity updated; method invoked (instructions executed))

Regarding Claims 3, 23, Kekic discloses the method, services architecture of claim 1 further comprising

disabling the module including the service entity; (Kekic col 71, ll 55-56: disable notification) and

selectively enabling, in response to the significant occurrence, the module including the service entity, wherein the persistent association is independent of enabling and disabling of the service entity. (Kekic col 71, ll 33-38: hashtable; only notification for associated object; (selective enablement); col 71, ll 11-19: client receives notification when the state of server object change)

Regarding Claims 5, 25, Kekic discloses the method, services architecture of claims 1, 21 wherein the received registration employs a genericizing reference for identifying the service entity, the genericizing reference operable to avoid extraneous references and further operable for registration of a plurality of service entities, each of the service entities independent of references of other of the plurality of service entities. (Kekic col 71, ll 33-38: hashtable; entries independent of other registrations entries)

Regarding Claims 6, 26, Kekic discloses the method, services architecture of claims 1, 21 wherein the invoking occurs in a different executable entity than the significant occurrence and wherein the detecting further comprises transmitting the indication message from the process corresponding to the significant occurrence to the module including the service entity corresponding to the significant occurrence. (Kekic col 21, ll 10-17: server sends notification to clients (local objects; different executables); invoking local object methods)

Regarding Claims 7, 27, Kekic discloses the method, services architecture of claims 1, 21 wherein invoking further comprises:

identifying associated data indicative of the significant occurrence; (Kekic col 71, ll 33-38: hashtable; identify object (process) to invoke)

assembling an invocation call, the invocation call including a reference to the service entity and a reference to the identified associated data; (Kekic col 71, ll 46-48: notification is received; notification dispatcher update affected object and invokes method) and

executing the referenced service entity in the context of the referenced associated data. (Kekic col 71, ll 46-48: notification dispatcher updates the affected object and invokes method)

Regarding Claims 9, 29, Kekic discloses the method, services architecture of claims 1, 21 further comprising:

identifying, in a memory portion operable for dynamic allocation, an allocation adapted to store the notification indicative of the significant occurrence; tracking, via an allocation manager operable to manage portions of dynamic memory, references to the allocation; and deallocating, following execution of the service entity corresponding to the significant occurrence, the allocation, the deallocation occurring in the same identified memory portion. (Kekic col 73, ll 24-33: files are loaded

automatically in memory and managed by server; element manager is not loaded into memory until instructed to do so)

Regarding Claims 10, 30, Kekic discloses the method, services architecture of claims 1, 21 wherein establishing the persistent association further comprises storing, in a global association table, an indication of the significant occurrence and an indication of the module containing the service entity, the global association table persistently independent of enablement of the module including the service entity corresponding to the significant occurrence. (Kekic col 71, ll 33-38: hashtable; association between registered object and server; type of update (new alarm))

Regarding Claims 11, 31, Kekic discloses the method, services architecture of claims 1, 21 wherein establishing the persistent association further comprising storing, in a local association table, an indication of the significant occurrence and an indication of the service entity corresponding to the significant occurrence. (Kekic col 71, ll 33-38: hashtable; association between registered object and server; type of update (new alarm))

Regarding Claims 12, 32, Kekic discloses the method, services architecture of claims 1, 21 wherein the service entities are handlers corresponding to executable methods and the indication messages are events propagated by an invocation mechanism as a

result of the significant occurrence service entity. (Kekic col 71, ll 46-54: notification received; notification dispatcher updates affected object)

Regarding Claim 13, Kekic discloses the method of claim 1 wherein associating an identity of the significant occurrence with a service entity occurs in a native language of the service entity and corresponding subscriber, and avoids a corresponding definition in an external interface language, the external interface language for generating additional code, the additional code adapted for support and testing operations. (Kekic col 13, l 67 - col 14, l 5: native language such as JAVA used for programming client and service entity)

Regarding Claim 15, Kekic discloses a method for invocation of subscribers comprising:

receiving a subscription associative of a service entity and a significant occurrence, the service entity having instructions operative for executing and completing a particular task upon an indication of the significant occurrence; (Kekic col 71, ll 25-32: local objects to register or unregister their interest for notifications; register process (object, service entity))

associating the significant occurrence with the service entity, the association including a generic reference applicable to a plurality of service entities, the association further operable to selectively enable a module including the service entity upon the significant occurrence; (Kekic col 71, ll 25-32: local object to register

for notifications; col 71, ll 33-38: hashtable; association between local objects and servers; notifications)

receiving the indication of the significant occurrence; (Kekic col 71, ll 46-48: notification received, notification dispatcher update affected object; col 71, ll 11-19: client can receive notification when the state of server side objects change; (notification received))

determining, via the association, the corresponding service entity and the module including the service entity; selectively enabling the module including the service entity; (Kekic col 71, ll 25-32: local object to register for notifications; col 71, ll 33-38: hashtable; association between local objects and servers; notifications) and

dispatching the service entity to execute and complete the time based task. (Kekic col 71, ll 46-48: notification is received; notification dispatcher updates the affected object)

Regarding Claim 16, Kekic discloses the method of claim wherein the associating is performed by an association entry, the association entry further comprising a global entry and a local entry including an indication of the particular task. (Kekic col 71, ll 25-32: local object to register for notifications; col 71, ll 33-38: hashtable; association between local objects and servers; notifications)

Regarding Claim 17, Kekic discloses the method of claim 16 wherein the global entry is operable to trigger enablement of the module including the local entry if the module is

not enabled upon the notification of the significant occurrence. (Kekic col 71, ll 33-38; col 71, ll 16-19: listener invokes local object required to receive notification of event (significant occurrence))

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims **4, 8, 18, 19, 20, 24, 28, 33** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kekic** in view of **McIntyre et al.** (US Patent No. **6,813,587**).

Regarding Claims 4, 24, Kekic discloses the method, services architecture of claims 1, 21 wherein, following selectively enabling:

assigning, to a thread, performance of the service entity corresponding to the significant occurrence. (Kekic col 71, ll 46-48: notification is received; notification dispatcher update affected object and invokes method)

Kekic does not explicitly disclose enqueuing an indication in a queue.

However, McIntyre discloses:

corresponding to the queue; (McIntyre col 29, ll 29-30; col 30, ll 29-32: remove message from queue; col 12, ll 49-63: message queue parameters)

enqueuing an indication of the significant occurrence a queue, the queue corresponding to the process including the module containing the service entity; (McIntyre col 29, ll 29-30; col 30, ll 29-32: remove message from queue; col 12, ll 49-63: message queue parameters)

It would have been obvious to one of ordinary skill in the art to modify Kekic for enqueuing an indication in a queue as taught by McIntyre. One of ordinary skill in the art would have been motivated to employ the teachings of McIntyre to verify proper execution of the controlled process under the lower-level process controllers and to configure the set points of the controlled process. (McIntyre col 2, ll 2-5: " … *Such oversight is generally desired to verify proper execution of the controlled process under the lower-level process controllers and to configure the set points of the controlled process.…* ")

Regarding Claims 8, 28, Kekic discloses the method, services architecture of claims 7, 27 wherein the executing further comprises a dispatch command, the dispatch command operative to enqueue multiple invocations to the same service entity, wherein the dispatch command references the associated data via a genericizing reference, the genericizing reference operable to include multiple types of associated data independently of the dispatched service entities employing the associated data. (Kekic col 71, ll 33-38: hashtable; association between registered object and server; type of update (new alarm)) Kekic does not explicitly disclose to enqueue invocations. However, McIntyre discloses wherein to enqueued invocations or notification message.

(McIntyre col 29, ll 29-30; col 30, ll 29-32: remove message from queue; col 12, ll 49-63: message queue parameters)

It would have been obvious to one of ordinary skill in the art to modify Kekic enqueued invocations (notifications, messages) as taught by McIntyre. One of ordinary skill in the art would have been motivated to employ the teachings of McIntyre to verify proper execution of the controlled process under the lower-level process controllers and to configure the set points of the controlled process. (McIntyre col 2, ll 2-5)

Regarding Claim 18, Kekic discloses a method for interprocess communication in an information retrieval environment comprising:

registering an indication of the subscription in a local map operative for associating significant occurrences and service entities in the local process for invoking the service entity responsively to an occurrence of the defined significant occurrence; (Kekic col 71, ll 25-32: local object to register for notifications; col 71, ll 33-38: hashtable; association between local objects and servers; notifications)

registering an indication of the subscription in a global map operative for associating invocation message with service entities, and further operable to invoke components including service entities in remote processes; (Kekic col 71, ll 25-32: local object to register for notifications; col 71, ll 33-38: hashtable; association between local objects and servers; notifications)

invoking the component including the specified service entities in response to the dispatching and propagating the publication. (Kekic col 71, ll 46-48: notification is received; notification dispatcher updates the affected object)

Kekic does not explicitly disclose message processing (publish/subscribe) between network connected nodes.

However, McIntyre discloses:

defining an invocation message indicative of a significant occurrence in the information retrieval environment, the invocation message corresponding to a common class associated with a plurality of invocation messages; (McIntyre col 29, ll 29-30; col 30, ll 29-32: remove message from queue between client and server; col 12, ll 49-63: message queue parameters)

subscribing, from a local subscriber in a local process, to the invocation message for establishing reporting of the significant occurrence, subscribing further including specifying a service entity operable to process the invocation message; (McIntyre col 29, ll 29-30; col 30, ll 29-32: remove message from queue between client and server; col 12, ll 49-63: message queue parameters)

receiving a publication of the invocation message from a monitoring component; propagating the publication and indexing the invocation message in the global map; dispatching, based on the indexing, an indication of the publication to the local subscribers; (McIntyre col 29, ll 29-30; col 30, ll 29-32: remove message from queue between client and server; col 12, ll 49-63: message queue parameters)

Regarding Claim 19, Kekic discloses the method of claim 18 wherein invoking further comprises selective activation of components including associated service entities, the service entities in inactive components responding to the dispatch upon activation. (Kekic col 71, ll 33-38: hashtable; for each server object; there can be multiple local objects notified)

Regarding Claim 20, Kekic discloses the method of claim 19 wherein the components including the service entities need not be active during the publication, the inactive service entities being invoked accordingly in response to the dispatching, wherein unavailable service entities consume fewer resources than available service entities. (Kekic col 7, ll 34-40: object states used to manage object (active, inactive); publisher equivalent to notification dispatcher (notification entity: specification page 12, lines 22-23))

Regarding Claim 33, Kekic discloses a method for managing modules in a services infrastructure comprising:

deploying a plurality of significant occurrences in the infrastructure environment; (Kekic col 7, ll 20-30: manage events (multiple or all events); event engine using rules to determine action to be taken in response to each event)

identifying service providers and user entities, the user entities operable for development and modification by a user, and the service providers unavailable for user modifications; (Kekic col 71, ll 33-38: hashtable identifies object to process

registered event; col 8, ll 22-33: local objects developed in JAVA programming language)

defining service entities operable to process each of the deployed significant occurrences referenced by the subscribers and publishers; (Kekic col 71, ll 33-38: hashtable designates object to process based on notification)

correlating each of the deployed significant occurrences with the corresponding subscribers and publishers; (Kekic col 71, ll 33-38: hashtable; correlate associate event (significant occurrence) with server and client) and

Kekic does not explicitly disclose message processing (publish/subscribe) between network connected nodes.

However, McIntyre discloses:

selectively invoking, upon publication of the significant occurrence by a publisher, each of the subscribers corresponding to the significant occurrence, the subscribers and publishers having knowledge only of the significant occurrence and associated clarifying data, the publication avoiding references by the user entities to the service providers processing the correlation of the significant occurrence with the corresponding subscribers, such that the subscribers and included service entities are independently active from publishers of the corresponding significant occurrence. (McIntyre col 29, ll 29-30; col 30, ll 29-32: remove message from queue between client and server; col 12, ll 49-63: message queue parameters)

identifying subscribers and publishers in the user entities, the subscribers having a service entity for handling a significant occurrence, and the publishers operable to

detect the significant occurrences, generate clarifying data associated with the significant occurrence and publish a corresponding notification to the subscribers of the same significant occurrence with the corresponding associated data; (McIntyre col 29, ll 29-30; col 30, ll 29-32: remove message from queue between client and server; col 12, ll 49-63: message queue parameters)

It would have been obvious to one of ordinary skill in the art to modify Kekic enqueued invocations (notifications, messages) as taught by McIntyre. One of ordinary skill in the art would have been motivated to employ the teachings of McIntyre to verify proper execution of the controlled process under the lower-level process controllers and to configure the set points of the controlled process. (McIntyre col 2, ll 2-5)

8. Claim **14** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Kekic** in view of **Dugan et al.** (US Patent No. **6,425,005**).

Regarding Claim 14, Kekic discloses the method of claim 13. Kekic does not explicitly disclose an interface definition language. However, Dugan discloses wherein the external interface language is the Object Management Group Interface Definition Language (OMG/IDL). (Dugan col 19, l 63 - col 20, l 2; col 11, ll 2-7: interfaces are defined as enable by an interface definition language; supported by CORBA)

It would have been obvious to one of ordinary skill in the art to modify Kekic to use an interface definition language as taught by Dugan. One of ordinary skill in the art

would have been motivated to employ the teachings of Dugan in order for network resources are conserved, and service provision efficiency increased. (Dugan col 6, ll 41-43: "*... In this manner, intelligent network resources are conserved, and service provision efficiency increased.* ... ")

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kyung Hye Shin whose telephone number is (571) 272-3920. The examiner can normally be reached on 9:30 am - 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tonia L. Dollinger can be reached on (571) 272-4170. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kyung Hye Shin
Examiner
Art Unit 2443

KHS
October 26, 2008

/Tonia LM Dollinger/

Supervisory Patent Examiner, Art Unit 2143